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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/294,259	04/19/99	MARGULIS	N PA1031US

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EXAMINER	
TRAN,T	
ART UNIT	**PAPER NUMBER**
2614	19

DATE MAILED: 08/14/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No.	Applicant(s)	
	09/294,259	MARGULIS, NEAL	
	Examiner	Art Unit	
	Trang U. Tran	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 May 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *50-97* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *50-83* is/are allowed.

6)☒ Claim(s) *84-97* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Terminal Disclaimer

1. The terminal disclaimer filed on May 18, 2001 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Patent No. 6,157,396 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Response to Arguments

2. Applicant's arguments with respect to claims 50-97 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 84-94 and 96-97 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frankenback (US. Patent No. 4,894,653) in view of Szeliski et al (US Patent No. 6,044,181) and further in view of Korst et al (US. Patent No. 5,950,015).

In consider claim 84, Frankenback discloses all claimed subject matter, note 1) the claimed receiving said bitstream information into a display input processor is met by the refresh memory subsystem 24 (Fig. 1A, col. 3, lines 1-30), 2) the claimed

processing said receiving bitstream information to generate DIP outputs is met by the refresh memory subsystem 24 (Fig. 1A, col. 3, lines 1-30), 3) the claimed receiving said DIP outputs into a display output processor is met by the video data system 28 (Fig. 1B, col. 4, line 15 to col. 5, line 2), and the claimed providing images based on said DOP outputs to said display device is met by the conventional monitor interface 57 (Fig. 1B, col. 5, lines 3-18).

However, Frankenback lacks to explicitly disclose the claimed processing said DIP outputs with a geometric transformation (GT) module to generate DOP outputs and the claimed directing said DOP outputs to a buffer memory module. Szeliski et al teaches that an apparatus for construction of panoramic mosaic image having geometric transformation module for geometrically transforming the image data (col. 9, lines 9-29) to avoid using cylindrical or spherical coordinates for constructing the mosaic by associating a rotation matrix with each input image and to allow any user to be able to "paint" a full view panoramic mosaic with a simple hand-held camera or camcorder. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the geometric transformation module as taught in Szeliski et al in order to construct and render panoramic mosaic images from a sequence of still images, video images or scanned photographic images (col. 1, lines 9-11 of Szeliski et al).

The combination of Frankenback and Szeliski et al does not explicitly disclose the claimed directing said DOP outputs to a buffer memory module. Korst et al teaches that the buffer module 114 is used to present the video data at a rate which suits the relevant user (column 4, lines 21-22). It would have been obvious to one of ordinary skill

in the art at the time of the invention to incorporate the buffer module as taught in Korst et al in order to allow transmission of the data to the display at a desired rate.

In consider claim 85, the claimed wherein processing said DIP output comprises said geometric transformation module preconditioning said DIP outputs using geometric transformation to compensate for characteristics of said display system is met by col. 9, lines 9-29 of Szeliski et al.

In consider claim 86, the claimed wherein processing said DIP outputs comprises using a spatial transformation module for redefining spatial relationships between image pixels derived from said DIP outputs is met by col. 9, lines 30-57 of Szeliski et al.

In consider claim 87, the claimed wherein processing said DIP outputs comprises using an alignment and rotation correction module for repositioning image pixels derived from said DIP outputs is met by col. 14, lines 46-60 of Szeliski et al.

In consider claim 88, the claimed wherein processing said DIP outputs comprises using a focus correction module for correcting image defocus in image data contained within said DOP outputs is met by col. 16, lines 24-65 of Szeliski et al.

In consider claim 89, the claimed wherein processing said DIP outputs comprises using a distortion correction module for correcting image distortions in image data contained within said DOP outputs is met by col. 24, line 48 to col. 25, line 43 of Szeliski et al.

In consider claim 90, the claimed wherein processing said DIP outputs comprises using a multi-frame correlation module for performing motion-compensated frame rate

conversion in image data contained within said DOP outputs is met by col. 26, lines 12-52 of Szeliski et al.

In consider claim 91, the claimed wherein processing said DIP outputs comprises improving skew, tangential symmetry, aspect angle, and scale-related distortions in image data contained within said DOP outputs is met by col. 31, line 53 to col. 32, line 42 of Szeliski et al.

In consider claim 92, the claimed wherein processing said received bitstream information to generate DIP outputs comprises processing with an image reconstruction module that utilizes or masks motion estimation vectors based on matching accuracy of motion estimation blocks associated with the motion estimation vectors is met by col. 26, lines 12-52 of Szeliski et al.

In consider claim 93, the claimed wherein utilizing motion estimation vectors comprises processing unit sub-block motion estimation is discerned is met by col. 26, lines 12-52 of Szeliski et al.

In consider claim 94, the claimed wherein utilizing motion estimation vectors comprises using enhanced matching processing techniques which include rotation, scale and sheer techniques is met by col.13, lines 2-60 and col. 14, lines 46-60 of Szeliski et al.

In consider claim 96, the claimed wherein processing said DIP output comprises utilizing a temporal gamma processing (TGP) module to independently determine, for each color component, an intensity value to output to said display device is met by col. 3, lines 13-55 of Frankenback.

In consider claim 97, the claimed wherein utilizing a TGP module to determine an intensity value comprises utilizing a desired intensity value and a previous frame intensity value is met by col. 3, lines 13-55 of Frankenback.

5. Claim 95 is rejected under 35 U.S.C. 103(a) as being unpatentable over Frankenback (US. Patent No. 4,894,653) in view of Szeliski et al (US Patent No. 6,044,181) and further in view of Korst et al (US. Patent No. 5,950,015). as applied to claim 92 above, and further in view of Aritake et al (US. Patent No. 5,872,590).

In consider claim 95, the combination of Frankenback, Szeliski et al and Korst et al discloses all the features of the instant invention except for providing the claimed wherein processing with an image reconstruction module comprises processing bitstream information comprising multiple images from multiple cameras. Aritake et al teaches an apparatus for allowing stereoscopic video image to be observed having the capability of receiving two images from two cameras with present a 3D stereoscopic image (col. 10, lines 57-67 and col. 16, lines 43-63). It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the capability of obtain and display the 3D stereoscopic images as taught by Aritake et al in order to allow 3D stereoscopic image to be observed (col. 2, lines 59-60 of Aritake et al).

Allowable Subject Matter

6. Claims 50-83 are allowed.

Claims 50-75 are directed to an image processing apparatus for receiving bitstream data and processing said bitstream data to provide video stream image data

to a display device. Independent claim 50 identifies the uniquely distinct features "a display input processor (DIP) coupled to a databus, said DIP comprising an input data connector and a first plurality of processing modules configured to receive bitstream data input and reconstruct said input to generate DIP outputs". The closest prior art, Szeliski et al (U.S. Patent No. 6,044,181) and Cooper et al (U.S. Patent No. 5,920,688) discloses conventional image processing apparatus, either singularly or in combination, fail to anticipate or render the above underlined limitation obvious.

Claims 76-83 are directed to an apparatus configured for processing bitstream data to form video stream image data for use in a display system. Independent claim 76 identifies the uniquely distinct features "a geometric transformation GT module coupled to said display device, said GT module configured to precondition said bitstream data using geometric transformations to compensate for characteristics of said display device" and "a temporal gamma processing TGP module coupled to said display device, said TGP module configured to independently determine an output intensity value for each color component output to said display device". The closest prior art, Szeliski et al (U.S. Patent No. 6,044,181) and Cooper et al (U.S. Patent No. 5,920,688) discloses conventional image processing apparatus, either singularly or in combination, fail to anticipate or render the above underlined limitation obvious.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trang U. Tran whose telephone number is (703) 305-0090. The examiner can normally be reached on 8:00 AM - 5:30 PM, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Reinhard J. Eisenzopf can be reached on (703) 305-4711. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-6306 for regular communications and (703) 308-6306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

TT TT
August 11, 2001

REINHARD J. EISENZOPF 8-12-01
SUPERVISORY PATENT EXAMINER
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